

### Remarks/Arguments

Claim 1 has been amended to delete recitation that the alien sequence does not occur naturally in any organism. Claim has been further amended to recite that the alien probe comprises a sequence selected from the group consisting of SEQ ID NOs: 1-150. Support for this amendment is found in Figures 1 and 2.

Claims 17 and 18 have been canceled, and their subject matter has been incorporated into independent claim 1.

No new matter has been added as a result of these amendments.

### Amendments After Final Rejection

In accordance with 37 C.F.R. §1.1116 and MPEP §714.12, the present amendments to claim 1 are made in order to place the present application in condition for allowance. As explained more fully below, Applicant submits that the present amendments address each of the previously levied rejections and that the presently amended claims are now in a form that is not anticipated or rendered obvious by the previously cited art. Thus, Applicant respectfully requests entry of the present amendments.

### Rejections under 35 USC §102

Claims 1-3 and 14-16 have been rejected under 35 USC §102(e) as being anticipated by Kincaid (US Patent Application Publication No. 2003/0186310, October 2003). The Examiner asserts that Kincaid anticipates the instant claims since Kincaid employs arrays containing control probes at each feature (analogous to the “discrete location” recited in the instant claims) on the array, wherein the control probes do not interfere with hybridization of a target sequence.

Applicant disagrees with the previously levied rejection since the Examiner has put forth no evidence that the control probes disclosed by Kincaid can be generated by the inventive Hidden Markov algorithm recited in claim 1. For example, there is no evidence of record that Kincaid’s control probes comprise intermittent highly improbable sequence patterns or subsequences throughout their lengths, such as those present in the alien probes recited in currently pending claims. As such, Applicant submits that the previously levied rejection is prima facie improper.

Nevertheless, solely in order to place the present application in condition for allowance, claim 1 has been amended to recite that the alien probe comprises a sequence selected from the group consisting of SEQ ID NOs: 1-150. Such alien probes are neither taught nor suggested by Kincaid, who discloses only two examples of control probes (see Table 1, page 9, column 1).

Thus, the teachings of Kincaid do not anticipate or render obvious currently amended claim 1 or its dependent claims. Furthermore, none of Schena *et al.* (PNAS, Vol. 93, pages 10614-10619, October 1996), Bao *et al.* (US Patent No. 6,251,601, June 2001) or Shah (US Patent No. 6,916,621, July 2005), each of which was cited in the Office Action dated June 2, 2006 teaches or suggests the presently recited sequences. As such, Applicant respectfully requests withdrawal of this rejection.

Applicant reserves the right to pursue any subject matter canceled as a result of this amendment in future prosecution, either in this application or in one or more continuing applications.

#### Rejections under 35 USC §112

Previously pending claims 1-3 and 13-18 have been rejected under 35 USC §112 as lacking written description for the recitation in previously pending claim 1 that “the alien sequence does not occur naturally in any organism”. The Examiner also indicates that this phrase, added in Applicant’s response dated December 4, 2006, constitutes new matter and has rejected the previously pending claims on this ground as well.

Applicant disagrees with both these rejections. However, solely in order to place the present application in condition for allowance, Applicant hereby amends claim 1 to delete the phrase “the alien sequence does not occur naturally in any organism”. As such, the previous rejections for lack of written description and for inclusion of new matter are rendered moot and Applicant respectfully requests their withdrawal.

Applicant reserves the right to pursue any subject matter canceled as a result of this amendment in future prosecution, either in this application or in one or more continuing applications.

Applicant submits that the present amendment and arguments place this application in condition for allowance. A notice to that effect is respectfully requested.

Applicant thanks the Examiner for careful consideration of this case. Please charge any fees that may be associated with this matter, or credit any overpayments, to our Deposit Account No. 03-1721.

Respectfully submitted,

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